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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,346	08/11/2006	Mariko Matsumoto	072982-0278	4168

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FOLEY AND LARDNER LLP
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EXAMINER

AHN, SAM K

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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03/01/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,346	Applicant(s) MATSUMOTO ET AL.	
	Examiner SAM K. AHN	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 29-60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 29-60 are objected to because of the following informalities:

In claim 29, line 12, “estimates channel vectors” should be “estimates the channel vectors”, third to the last line, “the channel path matrix” should be “the channel matrix”.

In claim 32, line 3, recites “equalizers for equalizing received signal”, which has already been recited in claim 29, lines 9-10, thus should be deleted.

In claim 35, the claim is objected as applied to claim 32.

In claim 37, line 14, “estimates channel vectors” should be “estimates the channel vectors”.

In claim 40, line 3, recites “equalizers for equalizing received signal”, which has already been recited in claim 37, line 11, thus should be deleted.

In claim 43, the claim is objected as applied to claim 40.

In claim 44, the claim is objected as applied to claim 40.

In claim 45, line 12, “estimates channel vectors” should be “estimates the channel vectors”.

In claim 48, line 2, recites “equalizers for equalizing received signals”, which has already been recited in claim 45, lines 9-10, thus should be deleted.

In claim 51, the claim is objected as applied to claim 48.

In claim 53, line 13, “estimates channel vectors” should be “estimates the channel vectors”.

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In claim 56, line 2, recites "equalizers for equalizing received signals", which has already been recited in claim 53, lines 9-10, thus should be deleted.

In claim 59, the claim is objected as applied to claim 56.

In claim 60, the claim is objected as applied to claim 56.

Claims 30,31,33,34,36,38,39,41,42,46,47,49,50,52,54,55,57 and 58 depend on one of the objected claims above. Appropriate correction is required.

Allowable Subject Matter

2. Claims 29-60 would be allowable if rewritten or amended to overcome the claim objections, set forth in this Office action.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ionescu et al. US 2006/0019602 A1,

Yee US 2004/0132416 A1,

Affes et al. US 2002/0051433 A1,

Kim et al. US 7,336,704 B2,

Arslan et al. US 7,321,646 B2, and

Hudson US 7,149,239 B2

teach in the similar field of endeavor of a system implemented in a wireless environment comprising a receiver with an equalizer determining tap weights, matrix and vectors.

4. This application is in condition for allowance except for the following formal matters:

Claim objections

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sam K. Ahn/
Primary Examiner, Art Unit 2611

2/26/2010